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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/730,246	12/05/2000	Jathan D. Edwards	53868US02	7896

7590 05/03/2002

Attention: Eric D. Levinson  
Imation Corp.  
Legal Affairs  
P.O. Box 64898  
St. Paul, MN 55164-0898

EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT PAPER NUMBER

1756

DATE MAILED: 05/03/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

MF-4

# Office Action Summary

Application No.

09/730,246

Applicant(s)

EDWARDS, JATHAN D.

Examiner

Martin J Angebrannt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2001 and 06 April 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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1. Claims 1-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims do not specify if the desired land and groove orientation of that desired for the final embossed/molded substrate or a stamper.

With respect to the claims reciting widths (or depths), do these require some of each of the lands and grooves (ie some of both) to meet these requirements or merely some of one or the other.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 28 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. No basis can be found for the 100 nm language in the specification as originally filed. This is considered new matter and should be removed with the next response.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1,2,4,5,8,11-13,15,16,19-21 and 27-28 are rejected under 35 U.S.C. 102(e) as being fully anticipated by Yamada et al. '267.

Yamada et al. '267 describes substrates formed for the optical disk which are all over 200 nm (10/37-46). A method for making a master and a stamper to produce these substrates is disclosed, where the thickness of the resist is equal to the depth of the grooves and may be between 40 and 100 nm. (10/57-11/10)

While it is not clear if the process uses thicknesses below or above 50 nm, it is clear that the stamper would have no features (grooves or lands) below 200 nm in width. The language concerning the inverse of the desired lands or grooves is considered intended use as the use of recording processes where data is recorded in the areas above lands, grooves or over both is known in the art, therefore embossed substrates resulting from use of either the first (odd) or second (even) generation masters would be useful or as evidenced by JP 60-029950 the master

itself may be useful as a substrate. The language also does not specify if the desired lands and grooves are those desired for the disk substrate or the stamper.

As a note, the examiner points out that the figures show the original protrusions to be rounded. The applicant may wish to add this to obviate some of the rejections of record or specify widths of both the grooves and the lands to obviate some of the rejections.

7. Claims 1-6,8,11-16,19-21,24 and 27-28 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamada et al. '267.

While it is not clear if the process uses thicknesses below or above 50 nm, it is clear that it would have been obvious to one skilled in the art to in the art to use any thickness between 40 and 100 nm for the resist with a reasonable expectation of achieving a useful master disk and stamper based upon the disclosure of this range as useful within the reference.

8. Claims 1-5,8,11-16,19-21 and 27-28 are rejected under 35 U.S.C. 102(b) as being fully anticipated by JP 59-193560.

JP 59-193560 describes a positive resist coated to a thickness of 70 nm, which was exposed using an argon ion laser beam to form grooves 70 nm deep, 800 nm wide at a pitch of 2.5 microns, which is then used to form an electroformed stamper.

9. Claims 1-5,11-15,19,20 and 27-28 are rejected under 35 U.S.C. 102(b) as being fully anticipated by JP 60-029950.

JP 60-029950 describes in the abstract a tracking layer formed of a photoresist having a thickness of 10 nm to 200 microns, with grooves having a depth of 10 nm to 200 microns (the same range as the thickness) and widths of 100 nm to 5 microns. The upper right and lower left columns on page 7 of the reference correspond to the abstract. Example 1 on the lower columns

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of page 22 uses a resist having a thickness of 0.9 microns to form grooves having a width of 1 micron and a depth of 0.9 microns.

Example 1 anticipates these claims.

10. Claims 1-7, 11-15, 19, 20 and 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 60-029950.

It would have been obvious to one skilled in the art to form recording tracks having thicknesses equal to the depth of the grooves as in example 1, but using other disclosed resist thicknesses, such as 10, 25, 50 or 100 nm and/or other groove widths, such as 100, 150, 200 nm for the grooves based upon the teachings of the reference to do so.

11. Claims 1-5, 8-23 and 27-28 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by DeLaat '735.

DeLaat '735 teaches the formation of a spiral pattern, where the depth of the grooves is 100 nm. (0.1 microns) This is hardened through UV exposure, silver is deposited on it, nickel electroformed thereon, the master is peeled away and a second master is formed which is identical to the pattern in the master and is used in embossing

The applicant argues that the development down to the substrate is not taught. The examiner disagrees noting that figure 1 shows the result of the exposure and development, such that the conductive layer 4 is in contact with the substrate. The applicant argues that the article of DeLaat '735 forms data, not a groove within the scope of the claimed coverage. The examiner notes that the shape of the groove is not described in the claim and that no requirement for a series of concentric circles or a spiral extending across the entire surface of the disk is

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recited in the claims. The pits of DeLaat are held to be equivalent to embraced by the groove language of the instant claims. The rejection is maintained.

The examiner notes that at least some of the groove portions are wider than some of the land features. Therefore the reference meets the claim limitations.

12. Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeLaat '735, in view of JP 60-029950 and Santoh et al. '469.

Santoh et al. '469 teaches the formation of useful embossed optical recording media substrate which have grooves 100 nm to 5 microns wide, and 10 to 400 nm deep. (6/6-16).

It would have been obvious to one skilled in the art to modify the process of DeLaat '735 to make other optical recording media substrate which are known to be useful in the art, such as those which have wider openings than resist covered areas taught by JP 60-029950 and Santoh et al. '469 as old and well known within the art, with a reasonable expectation of forming a useful recording medium substrate and being able to form more of them due to the number of stamping masters which can be made from the first generation master and used to emboss substrates.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebranntdt whose telephone number is 703-308-4397. The examiner can normally be reached on Mondays-Thursday and alternate Fridays.

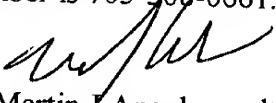
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Martin J. Angebranndt  
Primary Examiner  
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May 1, 2002